Sea Turtle Program Overview
Southeast Fisheries Science Center
Observer Programs

Laboratories conducting sea turtle research activities (observer programs)
Directed Shark Gillnet Observer Program, Shark Bottom Longline Observer Program (Panama City Laboratory); Pelagic Longline Observer Programs (Miami Laboratory); Shrimp Trawl Observer Program, Directed Reef fish Observer Program and Oil Platform Removal Observer Program (Galveston Laboratory).

Summary of primary ongoing and proposed (funded) sea turtle research and monitoring activities for sea turtles, including international research and monitoring activities, if applicable.

All these observer projects will sample sea turtles captured by the fishery. The Directed Shark Gillnet Fishery and Shark Bottom Longline Fishery projects responds to National Marine Fisheries Service's 2004 Opinion for Draft Amendment 1 to the Highly Migratory Species Federal Management Plan, and its effects on listed species in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq*) that directs federal agencies to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Specifically, the National Marine Fisheries Service's 2004 Opinion for Draft Amendment 1 to the Highly Migratory Species Federal Management Plan, and its effects on listed species in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq)* are that NOAA Fisheries should conduct or fund research on the impacts on these species from shark fisheries.

Directed Shark Gillnet Fishery (Gillnet Gear) (Carlson)
The shark drift gillnet fishery developed off the east coast of Florida and Georgia in the late 1980's. Although sharks are primarily targeted, vessel operators are opportunistic and will retain and sell some of the incidental catch such as barracuda, bluefish, and Spanish mackerel. Shark gillnet gear also interacts with protected species such as marine mammals, sea turtles, and smalltooth sawfish. This fishery has been classified as a Category II with respect to the MMPA List of Fisheries process. Any species that cannot be landed because of fishery regulations must be released, whether dead or alive. Sea turtles may infrequently be taken in various federal shark fisheries involving gillnet gear.

Shark Bottom Longline Fishery (Bottom Longline Gear) (Carlson)
Historically, the southeastern United States commercial shark bottom longline fishery has been monitored by the University of Florida/Commercial Shark Fishery Observer Program since 1994. The fishery is active from the mid-Atlantic Bight to south Florida and throughout the Gulf of Mexico (Figure 1). Vessels in the fishery are typically fiberglass and averaged up to 50 feet in length. Longline characteristics vary regionally with gear normally consisting of about 5-15 miles of longline and 500-1500 hooks. Gear is set at sunset and allowed to soak overnight before hauling back in the morning. The bottom longline gear targets large coastal sharks, but small

coastal, pelagic and dogfish species are also caught. The large coastal shark catch, which comprised almost three quarters (71.5%) of the total shark catch (TC), consisted primarily of sandbar (*Carcharhinus plumbeus*, 32.8% TC and 46.0% of LC), blacktip (*Carcharhinus limbatus*, 16.8% LC) and tiger (*Galeocerdo cuvier*, 11.6% LC) sharks. Small coastal sharks comprised one-quarter (24.9%) of the total shark catch. The Atlantic sharpnose shark (*Rhizoprionodon terraenovae*), traditionally the species most often encountered in the small coastal shark catch, represented nearly two-thirds (64.7%) of the small coastal catch (SC). Sea turtles may infrequently be taken in various federal shark fisheries involving longline gear.

Pelagic Longline Fishery (Pelagic Longline Gear) (Lee)
U.S. pelagic longline fishermen began targeting highly migratory species in the Atlantic Ocean in the early 1960s. U.S. landings of swordfish did not exceed 1,500 metric tons until the mid-1970s. The gear used in the fishery has evolved over time. Presently, fishermen use monofilament mainline that is rigged with various hook and float configurations depending on whether the target is tunas or swordfish. Pelagic longline fishermen locate fish by looking for temperature fronts between cooler and warmer water masses and typically set the gear across these breaks. These temperature fronts are often associated with currents, specifically the Gulf Stream Current, thus much of the fishing effort is associated with the edges of these currents. In recent years, the availability of high-resolution satellite-generated sea surface temperature data has greatly influenced landings.

The HMS pelagic longline fishery primarily targets swordfish, yellowfin tuna, or bigeye tuna in various areas and seasons. Secondary target species include dolphin; albacore tuna; and pelagic sharks including mako, thresher, and porbeagle sharks; as well as several species of large coastal sharks. Pelagic longline gear also interacts with protected species such as marine mammals, sea turtles, and seabirds. The gear has been classified as a Category I fishery with respect to the MMPA List of Fisheries process. Any species that cannot be landed because of fishery regulations must be released, whether dead or alive.

This project responds to the National Marine Fisheries Service (NOAA Fisheries) 2004 Biological Opinion and to the authority of the Highly Migratory Species Federal Management Plan (HMS FMP). Additionally, in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq) federal agencies are directed to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. As prescribed within this document, the NOAA Fisheries should conduct, support, and fund the research on the impacts of these species by the U.S. Atlantic pelagic longline fishery.

Commercial Shrimp Trawl Fishery Observer (Trawl Gear) (Nance)
Through use of seines in shallow waters the commercial penaeid shrimp fishery began in the late 1800s. The otter trawl, used currently in the fishery, was invented in 1915, and enabled vessels to pull one large trawl in deeper waters. Three commercially important penaeid shrimp species, brown shrimp (*Farfantepenaeus aztecus*), white shrimp (*Litopenaeus setiferus*) and pink shrimp (*Farfantepenaeus duorarum*) historically comprise the majority of shrimp landed. In 2002, these three species accounted for 96 percent of annual shrimp landed in the Gulf of Mexico,

approximately 62,142 mt (heads-off), valued at 364 million dollars. Shrimp landings in the southeastern Atlantic were approximately 11,983 mt valued at 56 million dollars.

NOAA Fisheries 2002 biological opinion (opinion) on shrimp trawling in the US Gulf of Mexico and southeastern Atlantic addresses management efforts to conserve loggerhead, Kemp's Ridley, leatherback, hawksbill and green sea turtles. The opinion was developed pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 as amended. The opinion directs for observer coverage to estimate the annual mortality of sea turtles as a result of trawl capture. As such, an increase in mortality from shrimping activity could require NOAA Fisheries to reinitiate Section 7 consultations. This opinion's incidental take statement establishes incidental take levels for the shrimp fishery based on observer coverage.

NMFS-certified observers collect data aboard commercial shrimp vessels for the evaluation of specific TED/BRD designs as related to bycatch reduction criteria established for Gulf of Mexico and southeastern Atlantic. Comparisons of catch data from control and experimental nets are conducted. Experimental and control nets are alternated from starboard to port outboard nets to reduce net and side biases. Detailed measurement and written description of TED, BRD, net type, construction, installation, webbing, and other associated gear characteristics are recorded at the start and end of each trip, or when adjustments are made. For each tow, environmental parameters, bottom time and operational aspects relative to each net are documented. The total catch weight, and counts, weights and target species are obtained from the experimental and control nets. All sea turtles are identified to species, measured, tagged, photographed and released. A subsample of approximately 70 pounds (32 kg) from each net (experimental and control) are processed, time permitting, for bycatch characterization.

Quantification of non-target and protected species taken in unobserved commercial shrimp trawl fisheries is critical to adequately assess management strategies for optimal conservation and protection of these species. To date, very limited historical and no known current data relative to catch composition, directed effort or operational aspects for the Gulf of Mexico and southeastern Atlantic skimmer trawl fisheries are available. Currently, TEDs are not required for the skimmer trawls, however, tow time limitations are imposed. The opinion, directs for further investigation as to the appropriateness of tow time limitations in terms of sea turtle interactions in this TED-exempted fishery. In 2004, NOAA Fisheries SEFSC Galveston Laboratory implemented an observer program to address this mandate.

Directed Reef fish Fishery (Bottom Longline and Bandit Reel Gear) (Nance)
Although numerous reef fish species are retained, the predominant targets of these fisheries are groupers and snappers. Longliners off the coast of Florida generally target red grouper (*Epinephelus morio*), and yellowedge grouper (*E. flavolimbatus*), blueline tilefish (*Caulolatilus microps*) and sharks in deeper waters. Soak time for longline gear averages about 3 hours. Bandit-rigged vessel operators also target red grouper and may seek yellowedge grouper and vermilion snapper (*Rhomboplites aurorubens*). Soak time for bandit gear averages about 1 hour. From historical effort data, most commercial fishing effort for red snapper (*Lutjanus campechanus*) using bandit gear occurs off Louisiana in statistical zones 14 and 15, and off the east coast of the United States.

Federal regulations have restricted size and landings of several reef fish species. Commercial landings for both shallow-water and deep-water groupers are regulated by poundage quotas, with 8.8 million pounds for shallow-water groupers and 1.02 million pounds for deep-water groupers. In January 1998, a permanent two-tier red snapper license limitation was established and allows for 2,000 and 200 pound trip limits.

This project responds to National Marine Fisheries Service's February 2005 Biological Opinion for The Continued Authorization of Reef Fish Fishing under the Gulf of Mexico Reef Fish Fishery Management Plan and Proposed Amendment 23, and its effects on listed species in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq*) that directs federal agencies to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Specifically, the National Marine Fisheries Service's 2005 Opinion directs that NOAA Fisheries should conduct or fund research on the impacts on these species from the reef fish fisheries. Specifically, and as cited in the Opinion, an observer program for the reef fish fishery in the Gulf of Mexico should be operative by August 2005 to assess sea turtle interactions and gather life history data.

Oil/Gas Platform Removal Observer (No Fishery Gear) (Gitschlag)
Underwater explosives are often used in the removal of oil and gas platforms in the US Gulf of Mexico. As a result of concern over the impacts of these underwater explosives on endangered and protected species of marine life such as sea turtles, an Incidental Take Statement was prepared under Section 7 of the Endangered Species Act. One of the requirements to reduce the potential for takes included the use of observers to conduct on-site monitoring. In response to this requirement the Platform Removal Observer Program was initiated in 1987. In 1995 similar monitoring protocols were initiated to protect marine mammals. Since that date, requirements for marine mammal monitoring expired and were reinitiated on several occasions.

This project responds to requirements in the 1988 Biological Opinion and subsequent Incidental Take Statement (ITS) prepared by the National Marine Fisheries Service pursuant to Section 7(b)(4) of the Endangered Species Act concerning potential impacts on endangered and threatened species associated with removal of oil and gas platforms in the Gulf of Mexico using explosives. Incidental taking that complies with the specified terms and conditions of this statement is authorized from the taking prohibitions of the ESA. This project provides personnel to perform various surveys as well as oversight of oil company compliance with these ITS requirements.

Status of or involvement in initiatives such as SAIP, TEWG, modeling exercises, etc.

Turtle catch data from the observer programs are used in many assessment analyses and modeling exercises.

Summary of ongoing and proposed sea turtle bycatch reduction gear research.

Observer programs are used to evaluate bycatch reduction gear that is developed by the gear research group at the NMFS Pascagoula Laboratory.

Summary of involvement in broader agency working groups/issues where your program is representing the marine turtle program

None.

Upcoming sea turtle (or related) meetings and/or workshops your FMC staff will be convening or participating in during 2006

None.

Anticipated changes in staffing or hiring of new sea turtle program staff in 2006

No changes are anticipated in observer program staffing.